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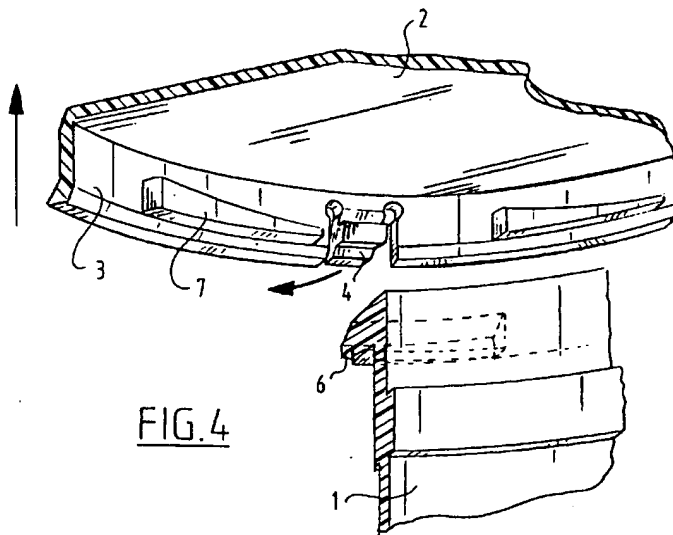
### (54) Combination of a bucket and a lid

(57) A combination of a bucket (1) and a lid (2) for airtight and/or watertight sealing of a product such as vegetables and fruit,

which bucket comprises a generally disc-shaped bottom, a side wall standing along the edge of the bottom and first cams (6) arranged on the mouth rim (5) of the side wall remote from the bottom, and which lid comprises an edge overhanging at least a part of the periphery of the mouth rim (3) of the bucket and second generally wedge-shaped cams (7) arranged on this edge,

which first and which second cams are arranged with their active surfaces at overlapping radial positions and can be placed at least partially coinciding; which active surfaces comprise rise surfaces;

this such that on preliminary placing of the lid the second cams can pass between the first cams until the lid comes into engagement with the mouth rim, whereafter through rotation of the lid relative to the bucket at least a number of the first and at least a number of the second cams are brought into mutual wedging engagement via said active surfaces such that with said rotation an axial pressing of the lid onto the mouth rim is effected.



**FIG. 4**

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## Description

[0001] The invention relates to a combination of a bucket and a lid for airtight and/or watertight sealing of a product such as vegetables or paint.

[0002] Paint is usually packaged in metal cans. The drawback of these metal cans is that the lid is released from the container by means of for instance a screwdriver, whereby the lid is deformed and it is no longer possible to seal the can properly in airtight manner. Such a can moreover has the drawback that it is not nestable.

[0003] Vegetables are usually packaged in cans or in glass jars. A can has the drawback that it cannot be sealed after opening. A glass jar has the drawback that it is not nestable and that it is difficult to manufacture the jars from recycled glass, since the jars are usually made from clear glass.

[0004] It is an object of the present invention to obviate the above stated drawbacks.

[0005] This object is achieved according to the invention by a combination of a bucket and a lid according to claim 1. In the combination according to the invention a screw closure of the lid on the bucket is obtained in simple manner by the co-acting first and second cams, which are provided with rise surfaces. It is hereby possible to repeatedly open and subsequently re-seal the combination in airtight manner.

[0006] Preferably provided on the mouth rim or on the part of the lid lying against the mouth rim of the bucket is a peripheral endless rib, which penetrates into the opposite surface when the combination is closed. A reliable and effective closure is hereby obtained.

[0007] In an embodiment of the invention a lip is arranged in the edge of the lid overhanging the mouth rim of the bucket, which lip locks the lid against rotation relative to the bucket. Such a lip is designated as tamper-evident, whereby it is possible to see whether the combination has been opened since manufacture. A child-proof fastening is moreover obtained with the lip.

[0008] In another embodiment of the invention the lid has a central recess, the peripheral part of which lies against the inside of the side wall of the bucket in closed position of the combination. A peripheral endless rib can herein be arranged on one of these co-acting surfaces if desired. Because the co-acting surfaces make contact and particularly because the optional endless rib presses into the opposite surface, an additional sealing of the combination is hereby obtained.

[0009] The combination is further provided in advantageous manner with a profiling, for instance a matt finish, on the outside of the side wall of the bucket and/or on the outside of the edge of the lid. Owing to this profiling the user obtains a better grip on the combination whereby it is easy to open or close. A matt finish is preferably used since this is effective and moreover enhances hygiene.

[0010] In yet another embodiment of the invention the bucket is at least partially nestable, whereby storage

space and transport costs are reduced.

[0011] In a further embodiment of the invention the outer diameter of the lid is smaller than 160 mm. This ensures that a user can always grip and then open or close the combination with two hands.

[0012] The combination preferably consists of polypropylene, polyethylene terephthalate, polyethylene or polycarbonate.

[0013] These and other advantages of the invention will now be elucidated with reference to the annexed drawings.

Figure 1 shows a perspective view of the combination according to the invention;  
figure 2 shows a top view of the combination with partially cut-away parts;  
figure 3 is a perspective view as seen from the inside of the combination according to the invention with partially cut-away parts;  
figure 4 is a perspective view of the combination according to the invention with partially cut-away parts, as seen from the inside of the combination;  
figure 5 shows a cross-section of the combination according to the invention.

[0014] Figure 1 shows a combination of a bucket 1 and a lid 2. The lid comprises an edge 3 overhanging the bucket 1. In the edge 3 of lid 2 overhanging bucket 1 is arranged a lip 4 which can be broken off. This lip locks lid 2 against rotation relative to bucket 1. The locking is released by breaking off the lip and the combination of bucket 1 and lid 2 can be opened.

[0015] Figure 2 shows a top view of the combination. It can be seen herein that bucket 1 has a mouth rim 5 on which angularly equidistant cams 6 are arranged. These cams 6 co-act with cams 7 arranged on the inside of lid 2 on edge 3 (see figure 3). Cams 6, 7 are preferably wedge-shaped, whereby the mouth rim 5 of the bucket is pressed onto the upper surface of lid 2 when the combination is closed, whereby an airtight sealing is obtained.

[0016] When a combination of bucket 1 and lid 2 is closed, this combination can be opened by first breaking off the lip 4, whereby the rotation locking is released, and by then rotating lid 2 relative to bucket such that cams 6, 7 are no longer mutually overlapping in top view and by finally lifting the lid whereby cams 6 pass between cams 7 on the edge 3 of lid 2.

[0017] Figure 5 shows a cross-section of the combination of a bucket 1 and a lid 2. An annular peripheral rib 8 is preferably provided on either mouth rim 5 of bucket 1 or on the part of lid 2 co-acting therewith. When the combination is closed the rib penetrates into the opposite surface, whereby a reliable sealing of the combination is obtained. It is further possible to provide a second annular rib 9, whereby an additional sealing of the combination is obtained.

[0018] Mouth rim 5 of bucket 1 preferably transposes

smoothly into cams 6. It hereby becomes possible to click lid 2 onto bucket 1 after filling of the bucket, whereby this latter is closed in one movement and directly sealed owing to the lip 4.

[0019] A stepped part 10 is preferably provided in the side wall of bucket 1. This stepped part 10 enables nested stacking of different buckets, whereby the buckets do not become jammed together. Similarly, lid 2 is provided with a suitably formed edge 11. Owing to this edge 11 the lids 2 are likewise stackable.

[0020] The side wall of bucket 1 and/or edge 3 of lid 2 can be provided with a profiling, such as a matt finish, whereby a user can obtain extra grip on the combination. For a better grip the outer diameter of lid 2 is preferably smaller than 160 mm.

[0021] The combination is preferably manufactured from polypropylene, polycarbonate, polyethylene or polyethylene terephthalate.

#### Claims

1. Combination of a bucket and a lid for airtight and/or watertight sealing of a product such as vegetables and fruit,

which bucket comprises a generally disc-shaped bottom, a side wall standing along the edge of the bottom and first cams arranged on the mouth rim of the side wall remote from the bottom, and

which lid comprises an edge overhanging at least a part of the periphery of the mouth rim of the bucket and second generally wedge-shaped cams arranged on this edge,

which first and which second cams are arranged with their active surfaces at overlapping radial positions and can be placed at least partially coinciding;

which active surfaces comprise rise surfaces; this such that on preliminary placing of the lid the second cams can pass between the first cams until the lid comes into engagement with the mouth rim, whereafter through rotation of the lid relative to the bucket at least a number of the first and at least a number of the second cams are brought into mutual wedging engagement via said active surfaces such that with said rotation an axial pressing of the lid onto the mouth rim is effected.

2. Combination as claimed in claim 1, wherein on at least one of the mouth rim of the bucket and the surface of the lid co-acting therewith a peripheral, endless, optionally circular rib concentric with the combination is arranged for airtight sealing of the combination.

3. Combination as claimed in claim 1, wherein a lip which can be broken off is arranged in the edge of the lid, which lip locks the lid against rotation relative to the bucket.

4. Combination as claimed in claim 1, wherein the lid has a central recess, the peripheral part of which lies against the inside of the side wall of the bucket in closed position of the combination.

5. Combination as claimed in claim 4, wherein on at least one of the peripheral part of the recess and the side wall of the bucket an endless, peripheral rib is arranged for airtight sealing of the combination.

6. Combination as claimed in claim 1, wherein a profiling, for instance a matt finish, is arranged on the outside of the side wall of the container and/or on the outside of the edge of the lid.

7. Combination as claimed in claim 1, wherein the bucket is at least partially nestable.

8. Combination as claimed in claim 1, wherein the outer diameter of the lid is smaller than 160 mm.

9. Combination as claimed in claim 1, wherein the bucket and the lid consist of PP, PET, PE or PC.

10. Combination as claimed in claim 1, wherein the first and the second cams are in angularly equidistant arrangement.

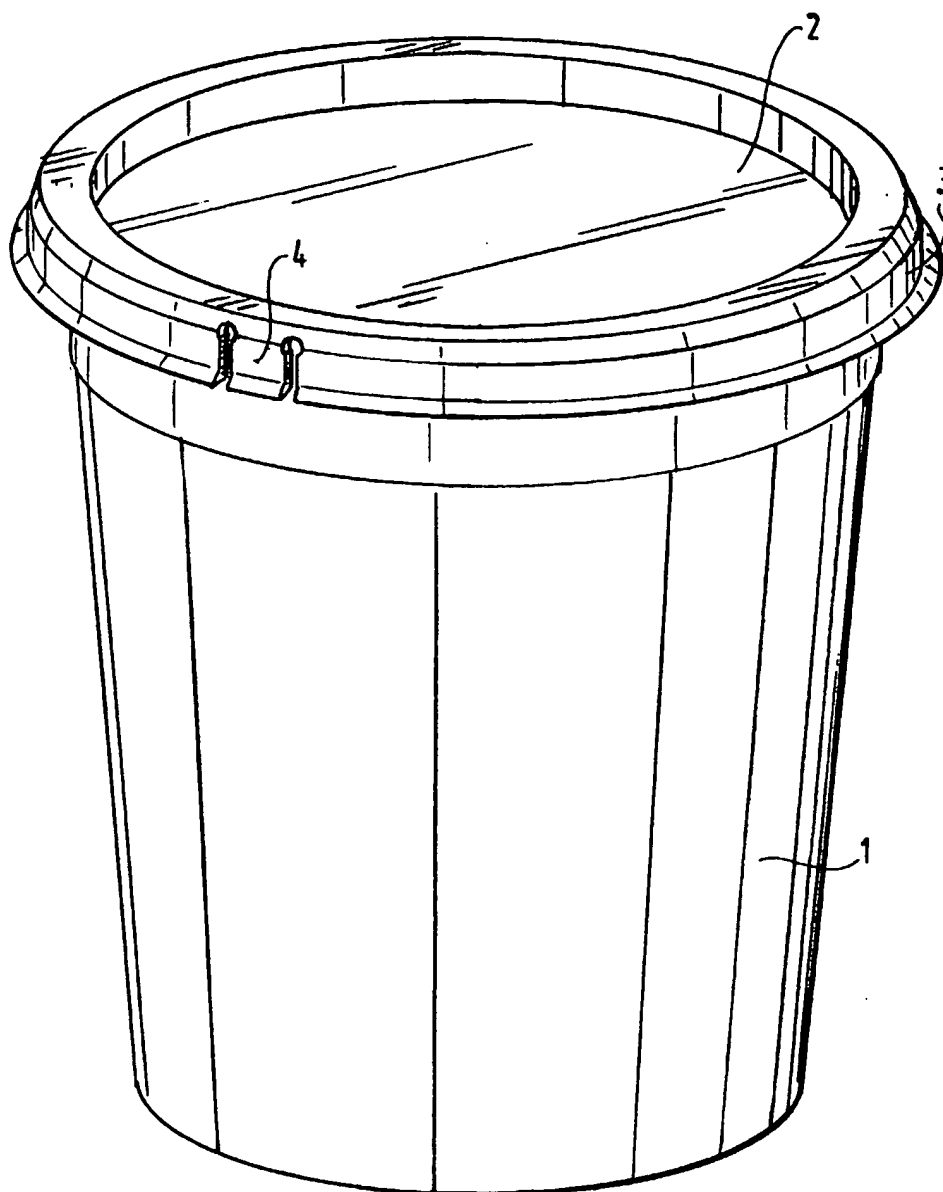


FIG.1

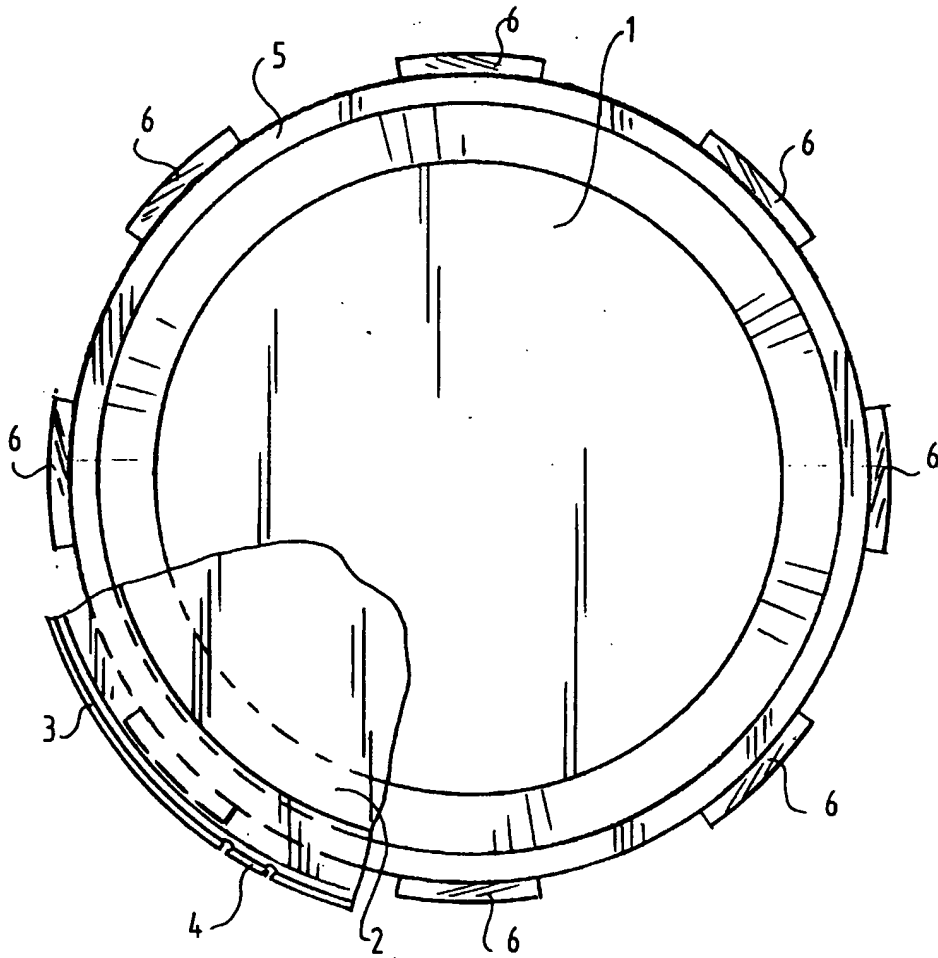
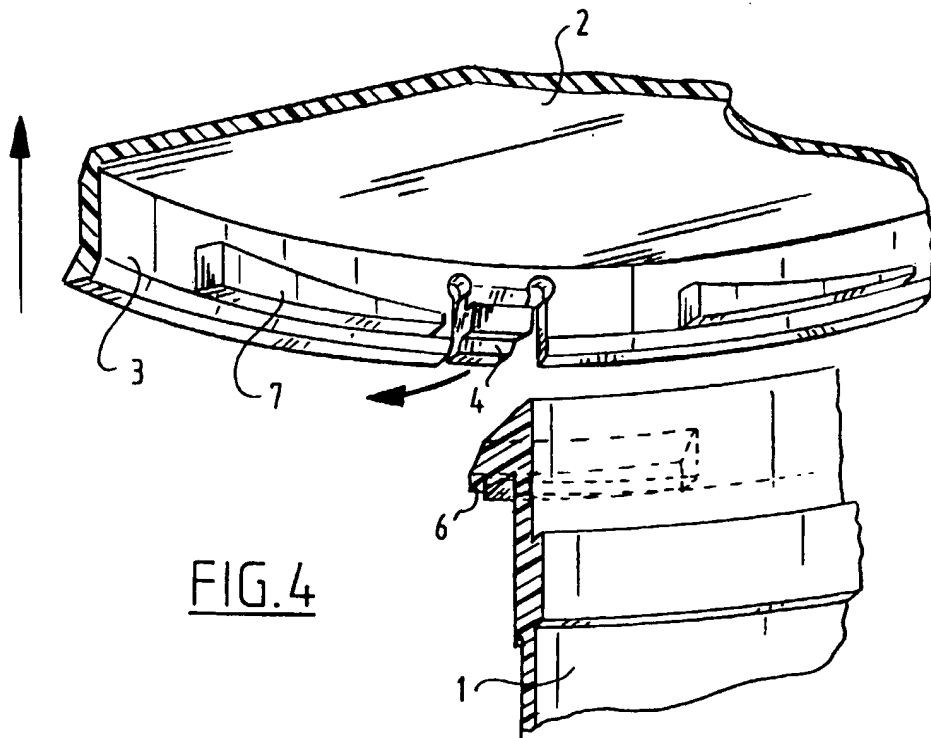
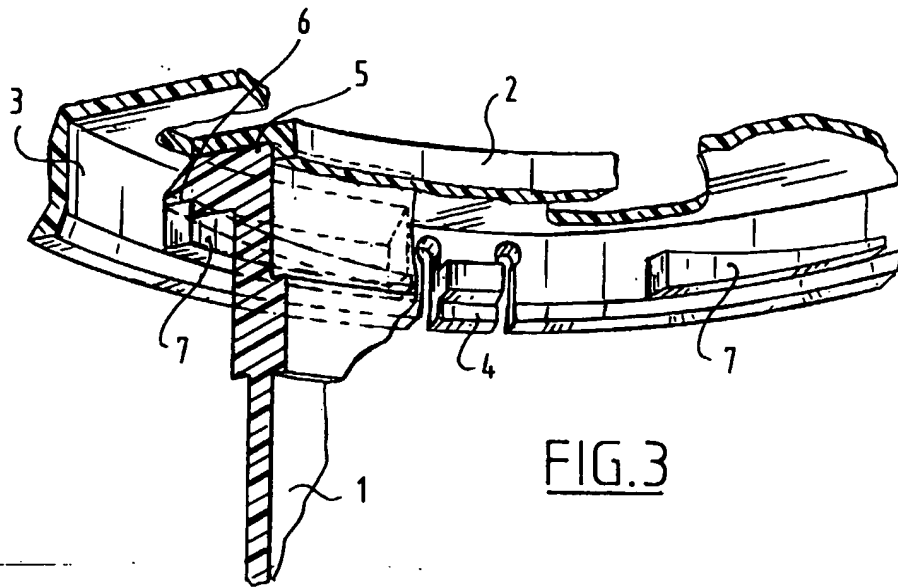


FIG. 2



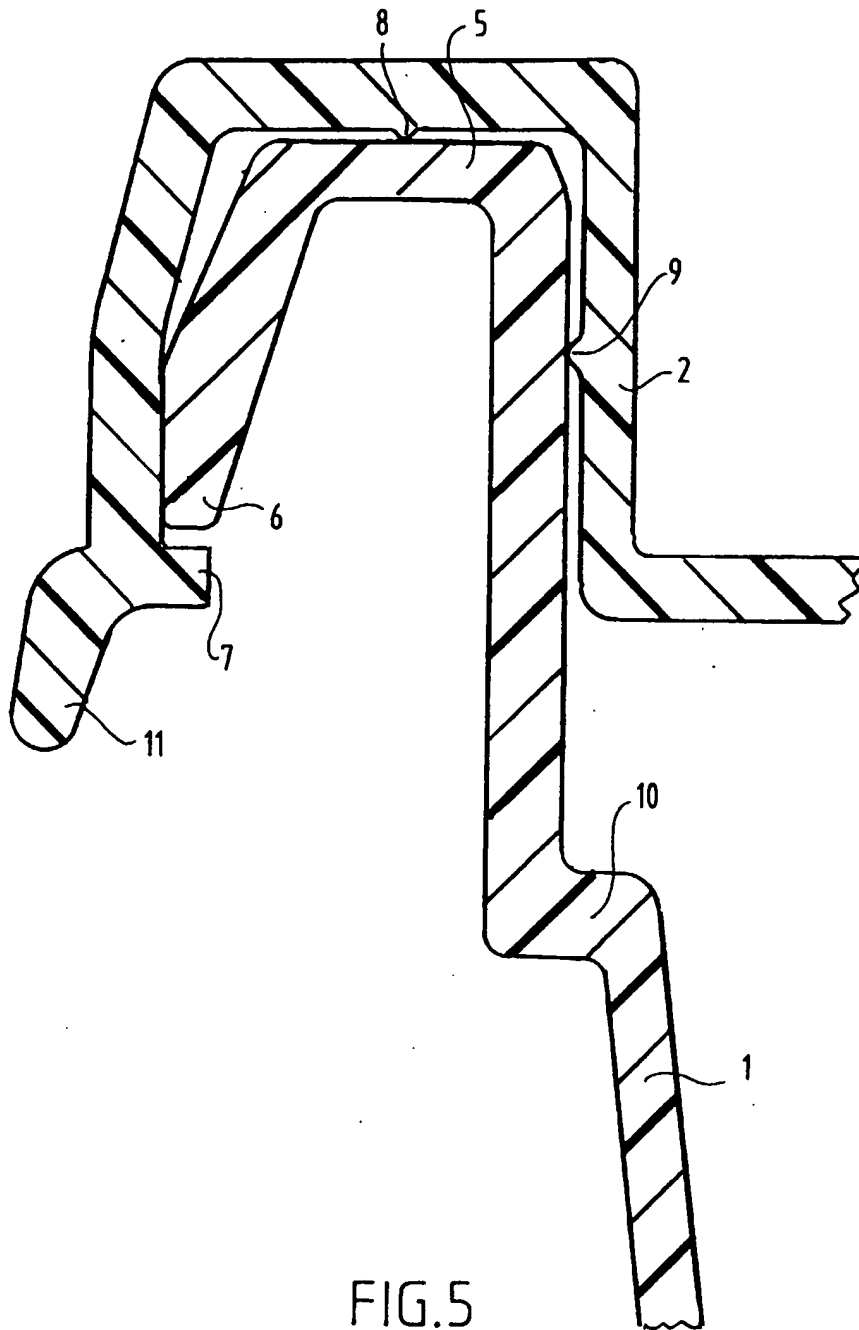


FIG. 5

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EP 99 20 1643

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A	* abstract *	7-9	
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The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
THE HAGUE		2 September 1999	SERRANO GALARRAGA, J
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